wherein the oligonucleotide includes at least 8 nucleotides wherein C is unmethylated and wherein X_1 and X_2 are nucleotides, wherein the cytokine is a peptide, whereby an antigen is optionally additionally administered, and wherein the antigen and the CpG oligonucleotide are not conjugated.

23
22. (New) The method of claim 21, wherein the immunopotentiating cytokine is an antigen-cytokine fusion protein.

24
23. (New) The method of claim 21, wherein the antigen is selected from the group consisting of a tumor antigen, a microbial antigen, and an allergen.

25
24. (New) The method of claim 23, wherein the antigen is a tumor antigen.

26
25. (New) The method of claim 21, wherein the antigen is administered to the subject in conjunction with the immunostimulatory CpG oligonucleotide and the immunopotentiating cytokine.

A5 (cont'd)

27
26. (New) The method of claim 21, wherein the subject is passively exposed to the antigen.

28
27. (New) The method of claim 21, wherein the subject has a neoplastic disorder.

29
28. (New) The method of claim 21, wherein the subject has a viral infection.

30
29. (New) The method of claim 21, wherein the subject is a non-human animal.

31
30. (New) The method of claim 29, wherein the non-human animal is a vertebrate animal selected from the group consisting of a dog, a cat, a horse, a cow, a pig, a sheep, a goat, a chicken, and a primate.

32
31. (New) A composition, comprising:

an effective amount for synergistically activating a dendritic cell of an immunostimulatory CpG oligonucleotide having a sequence including at least the following formula:

$$5' X_1CGX_2 3'$$

wherein the oligonucleotide includes at least 8 nucleotides wherein C is unmethylated and wherein X_1 and X_2 are nucleotides; and a cytokine selected from the group consisting of IL-3, IL-5 and IL-12, wherein the cytokine is a peptide.

33
32. (New) The composition of claim 31, wherein the cytokine is IL-3.

34
33. (New) The composition of claim 31, further comprising an antigen and wherein the antigen and the CpG oligonucleotide are not conjugated.

35
34. (New) The composition of claim 33, wherein the antigen is selected from the group consisting of a cancer antigen, a microbial antigen, and an allergen.

36
35. (New) A method for activating a dendritic cell, comprising:

contacting a dendritic cell exposed to an antigen with an effective amount for synergistically activating a dendritic cell of an immunopotentiating cytokine selected from the group consisting of IL-3, IL-5 and IL-12, and an immunostimulatory CpG oligonucleotide having a sequence including at least the following formula:

A5 (cont'd)

$$5' X_1CGX_2 3'$$

wherein the oligonucleotide includes at least 8 nucleotides wherein C is unmethylated and wherein X_1 and X_2 are nucleotides, wherein the cytokine is a peptide, whereby an antigen is optionally additionally administered, and wherein the antigen and the CpG oligonucleotide are not conjugated.

37
36. (New) The method of claim 35, wherein the antigen is a tumor antigen.

38
37. (New) A method for treating a subject having a neoplastic disorder, comprising:

administering to the tumor of a subject having a neoplastic disorder an immunopotentiating cytokine selected from the group consisting of IL-3, IL-5 and IL-12, and an immunostimulatory CpG oligonucleotide having a sequence including at least the following formula:

$$5' X_1CGX_2 3'$$

wherein the oligonucleotide includes at least 8 nucleotides wherein C is unmethylated and wherein X_1 and X_2 are nucleotides, in an amount effective for synergistically increasing survival time of the subject with respect to a subject administered the immunostimulatory CpG oligonucleotide or the immunopotentiating cytokine alone, wherein the cytokine is a peptide.

39
38. (New) The method of claim 37, wherein the tumor is selected from the group consisting of a lymphoma and a tumor of the brain, lung, ovary, breast, prostate, colon, and skin.